SIEMENS


# SINAMICS G120C

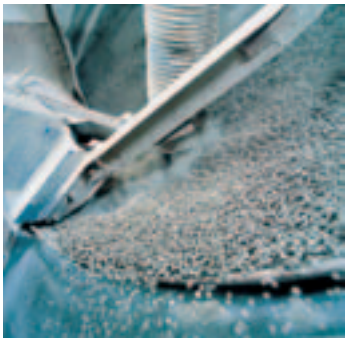
## Small but packed with functions

siemens.com/sinamics-g120c

# The compact inverter for an uncountable number of applications

**The SINAMICS G120C defines new standards in its class regarding size, fast commissioning, extremely simple operator control, high level of service-friendliness and highly integrated functionality.**

**It is predestined for machinery construction and sales through distribution channels and covers the requirements of many applications, e.g. for conveyor belts, mixers, extruders, pumps, fans, compressors and basic handling machines.**



SINAMICS offers a whole raft of advantages:
- Standard operator control and functionality as a result of the common hardware and software platform
- Both low-voltage as well as medium voltage
- A common engineering approach for all drives
  – SIZER for engineering
  – STARTER for parameterization and commissioning
- High degree of flexibility and combinability
- Identical options
- Minimized training costs

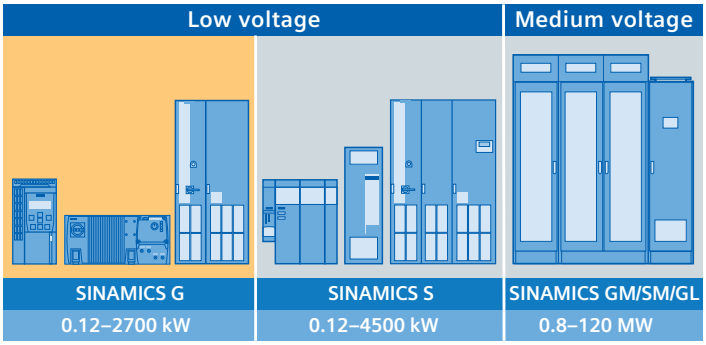
**Decisive advantages for machinery construction**

SINAMICS G120C was specifically designed for OEMs who require a cost-effective, space-saving inverter that is simple to operate and has a broad range of functions. This drive unit is especially compact with a high power density and sets itself apart as a result of its fast installation and commissioning, user-friendly connections and simple commissioning tools. Already integrated: Safety functions (STO via terminal/with PROFIsafe), drive networking via standard fieldbus systems as well as a card slot for cloning parameter sets.


With three frame sizes, SINAMICS G120C covers a range of power ratings from 0.55 kW up to 18.5 kW. To increase the energy efficiency, the converter is equipped with vector control to achieve optimum energy efficiency and/or has automatic flux reduction. The device is an integral component of Totally Integrated Automation and has PROFINET, PROFIBUS DP, USS/Modbus RTU as well as CANopen communication interfaces. Operation/commissioning is quickly and simply realized with a PC via USB or using the BOP-2 (Basic Operator Panel) or IOP (Intelligent Operator Panel).

**SINAMICS G120C is part of the SINAMICS family**

SINAMICS G120C is a member of the seamless and integrated family of SINAMICS drives – the first choice for innovative drive solutions that are fit for the future. SINAMICS offers the optimum drive for each and every application. As a consequence, all of the drives can be configured, parameterized, commissioned and operated in a standard fashion.



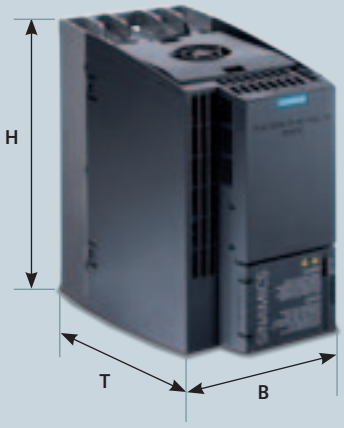
**Highlights at a glance**

| |
|---|
| **Mechanical design** |
| • Compact |
| • Simple commissioning and maintenance |
| • Side-by-side mounting without derating |
| • Pluggable terminals |
| **Electronics** |
| • Integrated braking chopper |
| • STO safety function |
| • IOP , BOP-2 and USB interface |
| • Interchangeable memory card (SD) |
| • Electrically isolated inputs |
| **Communication** |
| • PROFINET, PROFIBUS DP, CANopen, USS/Modbus RTU |
| • Integral component of Totally Integrated Automation |

## SINAMICS G120C – advantages

| | G120C features | Your benefits |
|---|---|---|
| **Small and rugged** | | |
|  | • High power density, low envelope dimensions<br>• Several devices can be mounted directly next to one another<br>• Coated modules<br>• Operation up to an ambient temperature of 60 °C<br>• Simple installation in the smallest space | • Low space requirement<br>• Long service life, high reliability<br>• Can be used in small control cabinets, close to the machine |
| **Operator friendliness** | | |
|  | • Optimized parameter set<br>• Optimized commissioning<br>• Getting-Started document<br>• BOP-2 and IOP operator panels can be used<br>• Integrated USB port | • Simple and fast software parameterization<br>• Simple operability during commissioning and in operation<br>• Minimized training costs, utilization of already existing SINAMICS know-how<br>• High degree of service friendliness |
| **Installation and maintenance** | | |
|  | • Pluggable terminals<br>• Cloning function using BOP-2, IOP or SD card<br>• G120C integrated in TIA teleservice<br>• Operating hours counter for "Drive on" and "Motor on" | • Fast mechanical installation<br>• Intuitive series commissioning<br>• Integration in the automation environment<br>• Simple maintenance |
| **Leading technological functions** | | |
|  | • Energy-efficient, encoderless vector control<br>• Automatic flux reduction with V/f ECO<br>• Integrated energy calculator<br>• Safety Integrated (STO) | • High control quality<br>• Energy-efficient motor control<br>• Energy-saving can be measured<br>• Integrated safety functions without supplementary costs |
| **State-of-the-art communication** | | |
|  | The following communication versions are available:<br>• PROFINET<br>• PROFIBUS DP<br>• CANopen<br>• USS/Modbus RTU | • Uses all of the common bus systems<br>• Can be flexibly used<br>• Reliable communication<br>• Can be simply inserted |

# Selection and ordering data




| Rated data | | | | Order Number | | | | Frame size | Dimensions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $P_{LO*}$ kW | $P_{LO*}$ Hp | $I_{LO*\_out}$ A | $I_{HO**\_out}$ A | | | | | | B | H | T |
| **3-phase supply voltage 380–480 V** | | | | | | | | | mm | mm | mm |
| 0.55 | 0.75 | 1.7 | 1.3 | 6SL3210-1KE11-8 | | | | FS A | 73 | 195 | 200 |
| 0.75 | 1.0 | 2.2 | 1.7 | 6SL3210-1KE12-3 | | | | | | | |
| 1.1 | 1.5 | 3.1 | 2.2 | 6SL3210-1KE13-2 | | | | | | | |
| 1.5 | 2.0 | 4.1 | 3.1 | 6SL3210-1KE14-3 | | | | | | | |
| 2.2 | 3.0 | 5.6 | 4.1 | 6SL3210-1KE15-8 | | | | | | | |
| 3 | 4.0 | 7.3 | 5.6 | 6SL3210-1KE17-5 | | | | | | | |
| 4 | 5.0 | 8.8 | 7.3 | 6SL3210-1KE18-8 | | | | | | | |
| 5.5 | 7.5 | 12.5 | 8.8 | 6SL3210-1KE21-3 | | | | FS B | 100 | | |
| 7.5 | 10.0 | 16.5 | 12.5 | 6SL3210-1KE21-7 | | | | | | | |
| 11 | 15.0 | 25.0 | 16.5 | 6SL3210-1KE22-6 | | | | FS C | 140 | 295 | |
| 15 | 20.0 | 31.0 | 25.0 | 6SL3210-1KE23-2 | | | | | | | |
| 18.5 | 24.0 | 37.0 | 31.0 | 6SL3210-1KE23-8 | | | | | | | |
| **EMC filter** | | | | | | | | | | | |
| Integrated EMC Class A/C2 filter | | | | | A | | | | | | |
| Unfiltered version | | | | | U | | | | | | |
| **Integrated communication interface** | | | | | | | | | | | |
| RS485 with USS/Modbus RTU | | | | | | B | 0 | | | | |
| SUB-D mit PROFIBUS DP | | | | | | P | 0 | | | | |
| SUB-D with CANopen | | | | | | C | 0 | | | | |
| PROFINET can be ordered from June 2012 | | | | | | F | 1 | | | | |

*LO = Low Overload
**HO = High Overload

| Technical data | |
|---|---|
| Voltage/frequency | 3-phase 380–480 V –20 % +10 % with 50/60 Hz +/–5 % |
| Power range | 0.55–18.5 kW/0.7–24 Hp |
| Overload power | For $I_{HO\_out}$:<br>2.0 x $I_{HO\_out}$ for 3 s and then 1.5 x $I_{HO\_out}$ for 57 s in a 300 s cycle<br>For $I_{LO\_out}$:<br>1.5 x $I_{LO\_out}$ for 3 s and then 1.1 x $I_{LO\_out}$ for 57 s in a 300 s cycle |
| Degree of protection | IP20/UL open type |
| Ambient temperature | 0° to 40 °C without derating/up to 60 °C with derating |
| EMV | Acc. to IEC 61800-3, Category 2 (FS A,B) or Category 3 (FSC) with internal EMC filter |
| Motor cable lengths | 50 m shielded/100 m unshielded |
| Standards | CE, UL |
| Signal inputs/outputs | 6 digital inputs; 2 digital outputs;<br>1 analog input; 1 analog output |
| Safety technology | SIL 2 acc. EN 61508, PL d acc. EN ISO 13849, class 3 acc. EN 60204 |
| Control modes | Vector, V/f, V/f ECO |
| Energy functions | Energy-saving calculator, energy consumption calculator, automatic flux reduction |
| Function | Fixed velocity/speed setpoint, 2/3 wire control, PID controller, motor holding brake control |
| Braking | Integrated braking chopper |

| Options | | |
|---|---|---|
| **Braking resistor** | | |
| FS A | 0.55–1.5 kW | 6SL3201-0BE14-3AA0 |
| FS A | 2.2–4 kW | 6SL3201-0BE21-0AA0 |
| FS B | 5.5–7.5 kW | 6SL3201-0BE21-8AA0 |
| FS C | 11–18.5 kW | 6SL3201-0BE23-8AA0 |
| **Input reactor** | | |
| FS A | 0.55–1.1 kW | 6SL3203-0CE13-2AA0 |
| FS A | 1.5–4 kW | 6SL3203-0CE21-0AA0 |
| FS B | 5.5–7.5 kW | 6SL3203-0CE21-8AA0 |
| FS C | 11–18.5 kW | 6SL3203-0CE23-8AA0 |
| **Operator panels** | | |
| BOP-2 | Basic Operator Panel | 6SL3255-0AA00-4CA1 |
| IOP | Intelligent Operator Panel | 6SL3255-0AA00-4JA0 |

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Subject to change without prior notice
03/12
Order No.: E80001-A360-P210-V2-7600
DISPO 21500
SCHÖ/40124 GD.MC.GM.SIPR.52.2.05 SB
03122.0
Printed in Germany